APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/608,932	06/27/2003	Ian Stuart Robinson	NG(ST)-6422	6999

7590	06/14/2005

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EXAMINER
MAI, LAM T

ART UNIT	PAPER NUMBER
2819	

DATE MAILED: 06/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	Applicant(s)
Office Action Summary	10/608,932	ROBINSON ET AL.
	Examiner	**Art Unit**	
	LAM T. MAI	2819	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _21 March 2005_.

2a)☐ This action is **FINAL.**   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _1-21 and 23-29_ is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) _27-29_ is/are allowed.

6)☒ Claim(s) _1-3,6,7,11,12,15,20,21 and 23_ is/are rejected.

7)☒ Claim(s) _4,5,8-10,13,14,16-19 and 24-26_ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _3/2005;8/2004_. 4/2007

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

U.S. Patent and Trademark Office

PTOL-326 (Rev. 1-04)   **Office Action Summary**   Part of Paper No./Mail Date 20050603

DETAILED ACTION

Specification

The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1 and 23 are rejected under 35 U.S.C. 102(b) as being anticipated by Tinker (USP 6362755).

Regarding claim 1, Tinker discloses sample rate conversion that teaches a look up table (76) (the specification describes a memory system can be a look up table) for providing a set of digital output samples in response to a given digital input sample (52) and a multiplexing (78) (the specification describes a aggregator can be a multiplexing) for outputting stream signal at a desired out sample rate (see claim 13 and figure 7 and col. 6).

Regarding claim 23, Tinker discloses sample rate conversion that teaches storing mean, which is a look up table (76) (the specification describes a memory system can be a look up table) for providing a set of digital output samples in response to a given

digital input sample (52) and aggregating mean, which is a multiplexor (78) (the specification describes a aggregator can be a multiplexor) for outputting stream signal at a desired out sample rate (see claim 13 and figure 7 and col. 6).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 2-3, 6-7, 11-12, 15, 20-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tinker (USP 6362755) as applied to claim1' above, and further in view of Panasik et al (USP 6489908).

Regarding claims 2 and 3, Tinker discloses sample rate conversion that teaches a look up table (76) (the specification describes a memory system can be a look up table) for providing a set of digital output samples in response to a given digital input sample (52) and a multiplexing (78) (the specification describes a aggregator can be a multiplexing) for outputting stream signal at a desired out sample rate (see claim 13 and figure 7 and col. 6). Tinker fails to teach N outputs samples is a positive integer greater than one and input sampling is less than output sample rate.

Panasik teaches that the memory system being programmed to provide N output samples that represent delta sigma modulated data and N is a positive greater than one (col. 5, lines 53-54). Panasil fails to teach the output is different from input sample sample.

It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate Panasik's circuit into Tinker's circuit to improve sampling conversion.

Regarding claim 6, Tinker discloses sample rate conversion that teaches a look up table (76) (the specification describes a memory system can be a look up table) for providing a set of digital output samples in response to a given digital input sample (52) and a multiplexing (78) (the specification describes a aggregator can be a multiplexing) for outputting stream signal at a desired out sample rate (see claim 13 and figure 7 and col. 6). Tinker fails to data stored in the look up tale being compressed data.

Panasik teaches that data stored in the memory system can be compressed data (see col. 5, line 63). Panasil fails to teach the output is different from input sample sample.

Regarding claim 7, Tinker discloses sample rate conversion that teaches a look up table (76) (the specification describes a memory system can be a look up table) for providing a set of digital output samples in response to a given digital input sample (52) and a multiplexing (78) (the specification describes a aggregator can be a multiplexing) for outputting stream signal at a desired out sample rate (see claim 13 and figure 7 and col. 6). Tinker fails to data stored in the look up tale being compressed by the delta sigma .

Panasik teaches data having been compressed by delta sigma modulation (see col 5, line 54).

It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate Panasik's circuit into Tinker's circuit to improve sampling conversion.

Regarding claims 11-12, Tinker discloses sample rate conversion that teaches a look up table (76) (the specification describes a memory system can be a look up table) for providing a set of digital output samples in response to a given digital input sample (52) and a multiplexing (78) (the specification describes a aggregator can be a multiplexing) for outputting stream signal at a desired out sample rate (see claim 13 and figure 7 and col. 6). Tinker fails to teach d/a converter

Panasik teaches that the aggregated output stream signal being converted by a digital analog converter (120,122,124,126,130). (see figure 6, col. 5 and 6).

Regarding claim 12, Panasik discloses in figure 9 a transmitter in combination with an antenna (see col. 7).

It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate Panasik's circuit into Tinker's circuit to improve sampling conversion.

Regarding claims 15, 20, and 21 Tinker discloses sample rate conversion that teaches a look up table (76) (the specification describes a memory system can be a look up table) for providing a set of digital output samples in response to a given digital input sample (52) and a multiplexing (78) (the specification describes a aggregator can be a multiplexing) for outputting stream signal at a desired out sample rate (see claim

13 and figure 7 and col. 6). Tinker fails to teach d/a converter, data in look up table is compressed data and data is compress by the delta sigma modulation.

Panasik teaches that the aggregated output stream signal being converted by a digital analog converter (120,122,124,126,130). (see figure 6, col. 5 and 6).

Panasik teaches that data stored in the look up table (memory system) is compressed if it is necessary to minimize number of storage cell (col. 5 line 63) Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to integrated compressed data in the memory system for space saving.

Panasik teaches that data stored in the look up table (memory system) is compressed if it is necessary to minimize number of storage cell and data is compress by delta sigma modulation (col. 5, lines 54) Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to integrated compressed data in the memory system for space saving.

It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate Panasik's circuit into Tinker's circuit to improve sampling conversion.

Double Patenting

A rejection based on double patenting of the "same invention" type finds its support in the language of 35 U.S.C. 101 which states that "whoever invents or discovers any new and useful process ... may obtain a patent therefor ..." (Emphasis added). Thus, the term "same invention," in this context, means an invention drawn to identical subject matter. See Miller v. Eagle Mfg. Co., 151 U.S. 186 (1894); In re Ockert, 245 F.2d 467, 114 USPQ 330 (CCPA 1957); and In re Vogel, 422 F.2d 438, 164 USPQ 619 (CCPA 1970).

A statutory type (35 U.S.C. 101) double patenting rejection can be overcome by canceling or amending the conflicting claims so they are no longer coextensive in

scope. The filing of a terminal disclaimer <u>cannot</u> overcome a double patenting rejection based upon 35 U.S.C. 101.

Claims 1-3, 6-7, 11-12, 15, 20-21, and 23 are rejected under the judicially created doctrine of double patenting over claims 5-31 of U. S. Patent No. 6,873,280 since the claims, if allowed, would improperly extend the "right to exclude" already granted in the patent.

The subject matter claimed in the instant application is fully disclosed in the patent and is covered by the patent since the patent and the application are claiming common subject matter, as follows: a signal conversion system having memory or look up table (18) and output digital signal (20) to aggregator (10) and dac (26) of figure 1 of USP 6.873.280.

Furthermore, there is no apparent reason why applicant was prevented from presenting claims corresponding to those of the instant application during prosecution of the application which matured into a patent. See *In re Schneller*, 397 F.2d 350, 158 USPQ 210 (CCPA 1968). See also MPEP § 804.

Allowable Subject Matter

Claims 4 and 5 are objected to as being dependent upon a rejected base claim, but they would be considered for allowable if they are rewritten in independent form including all of the limitations of the base claim and any intervening claims. Objected claims features are not taught or suggested in the prior art.

Claims 8-10 are objected to as being dependent upon a rejected base claim, but they would be considered for allowable if they are rewritten in independent form

including all of the limitations of the base claim and any intervening claims. Objected claims features are not taught or suggested in the prior art.

Claim 13 is objected to as being dependent upon a rejected base claim, but it would be considered for allowable if it is rewritten in independent form including all of the limitations of the base claim and any intervening claims. Objected claims features are not taught or suggested in the prior art.

Claim 14 is objected to as being dependent upon a rejected base claim, but it would be considered for allowable if it is rewritten in independent form including all of the limitations of the base claim and any intervening claims. Objected claims features are not taught or suggested in the prior art.

Claims 16-17 are objected to as being dependent upon a rejected base claim, but they would be considered for allowable if they are rewritten in independent form including all of the limitations of the base claim and any intervening claims. Objected claims features are not taught or suggested in the prior art.

Claims 18-19 are objected to as being dependent upon a rejected base claim, but they would be considered for allowable if they are rewritten in independent form including all of the limitations of the base claim and any intervening claims. Objected claims features are not taught or suggested in the prior art.

Claim 24-26 are objected to as being dependent upon a rejected base claim, but it would be considered for allowable if it is rewritten in independent form including all of the limitations of the base claim and any intervening claims. Objected claims features are not taught or suggested in the prior art.
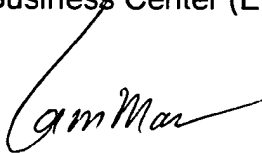
Claims 27-29 are allowable. The prior art fails to teach or suggest a method that implement a memory device is operative to emulate the delta sigma modulation by providing a corresponding vector of the output samples in response to each of the input samples.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LAM T. MAI whose telephone number is (571)272-1807. The examiner can normally be reached on 6:00 am - 4:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Pascal J. Robert can be reached on (571) 272-1769. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Lam T. Mai
Art Unit 2819